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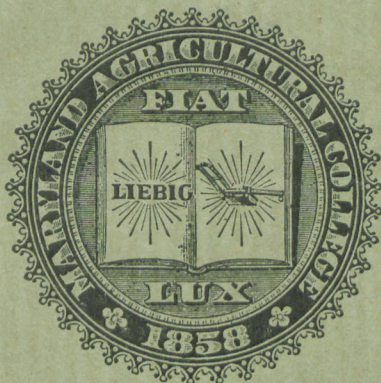
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INTRODUCTION.

To the Rural School Teachers of Maryland:

Miss Virginia McGaw, of School number 33, Baltimore, Maryland, in response to our request, has consented to publish in this *College Quarterly* her experiences of one year in conducting a school garden in connection with a city school in which she teaches. Her experience is most heartily presented for your consideration. Certainly, if such interest can be aroused in city children, then the more fortunate country child can be led to acquire an enthusiasm in such work with much less difficulty.

The time must come when the child of rural environment must find in the only school which ninety per cent. will ever attend, a training which will give it an intelligent adjustment to its environment. Without this adjustment, the future work of the child cannot reasonably expect to escape the state of drudgery. When a life's work degenerates into this condition, then contentment with it, or happiness as a result of it, becomes an idle dream. Can the accuracy of this statement be questioned? If so, it would be a great privilege for the writer to receive from some teacher a letter setting forth the particulars in which he is wrong.

The State Superintendent of Education has announced, I understand, that in obedience to legislative enactment of 1906, the State Board of Education has made the requirement that the subject of Agriculture, will have in the future a place in the curriculum of the public schools of Maryland, and that the country child must be given instruction for at least one year of his course in the principles of Agriculture. Further, in the re-arrangement of the curriculum, that consideration had been given to the classification of the teacher's work, by means of which so many subjects would not have to be considered each day. Thus we see that the Legislature of Maryland, the State Board of Education and the State Superintend-

ent of Public Instruction, each and all have taken the initial steps in this great movement, to bring the rural child into an intelligent adjustment to his environment. It is now "up to" the public school teachers and the parents of the rural children to enter into a hearty cooperation with those who have taken these initial steps, and press to a successful conclusion an effort which means so much to the rural child.

Let all who are interested in the child from the country, and every one should be, take this as a motto in this great work before us: "The country child is entitled from its State and from its County, to that consideration which will give him every opportunity to secure an education as well suited to his conditions, as is enjoyed by his city brothers and sisters."

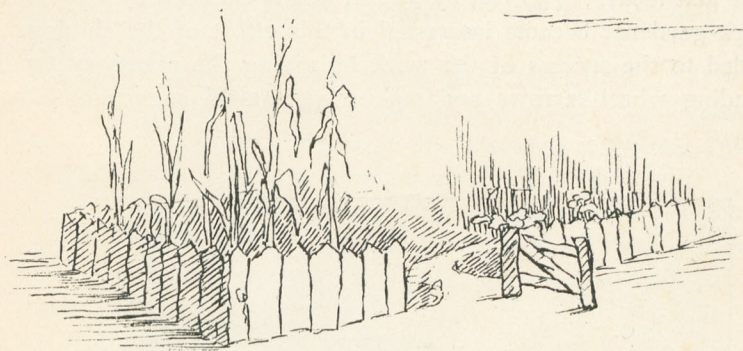
Assuring the teachers of the State that the Maryland Agricultural College stands ready to aid them in any manner in its power in the furtherance of this work, and that at all times its Faculty and equipment are ready to serve them in solving any difficulty which may beset them in their work of training the country children to understand their civic duties, their life's work, and to become American home-makers.

I am,

Fraternally yours,

R. W. SILVESTER,

President Maryland Agricultural College.



McGaw, Virginia.

A CITY SCHOOL GARDEN.

If a country boy were to hear his little city brother say, "Our class has a garden and I have a share in the workings of it," the country chap would "non plus" him by quickly exclaiming, "what's that! I work in my father's garden every year and know all about raising and gathering vegetables."

But to the city child who sees only cobblestones beneath his feet, whose view is contracted by rows of dingy houses, or who plays on a lot used both as a dump-pile and baseball ground, the privilege of a garden plat is a great treat and the products of its soil a revelation.

The aim here is to give an account of one season's work in such a garden, a garden treasured by children whose only knowledge of vegetable foods was, that "Mother got them in the market."

Through the courtesy of the City Park Superintendent, small sections of ground in some of the parks are placed at the disposal of the Board of Education for school gardens, and the privilege of cultivating these gardens is granted to teachers in an adjacent building.

It is of the section in Riverside Park I wish to write and the accompanying illustrations are pictures of this garden, taken at various times during the season.

The plat measures 50 feet by 25 feet and is enclosed by a fence. The park gardener became interested in this effort of the children and added to the success of the work by giving the necessary top soil, lending wheel-barrows and making occasional suggestions.



SCHOOL GARDEN, RIVERSIDE PARK.

As a preparation for the outside work we made a thorough study of soil composition and seed germination early in the winter. The children brought pieces of rock, pebbles, shells, wood and leaves as concrete illustrations and with these before us the following lessons were developed:

I. "That soil is made from the wasting away of all kinds of rock."

II. "That soil is made by decaying wood."

III. "That soil is made by decaying leaves."

IV. "That the above composites combine to form productive soil."

Lesson I. To find that soil is made from rock.

Pupils examined stones, pebbles and shells. They found some rough, some smooth. Through the teacher's questions, "Why are some rough? Why are some smooth? If those having a smooth surface now were once rough, what became of the particles which must have broken away?" the class expressed opinions until the final simple generalization was made, soil can be formed from the breaking up of rocks and shells.

Each topic was treated in a similar manner, bringing out the specific qualities of the specimen until we were able to make the summary:

"Soil is made from decayed rocks and shells; soil is made from decayed leaves; the rocks make a coarse soil called sand; the wood and leaves make finer soil called loam; the mixture of these soils makes productive soil."

This summary led to the next lesson, "The Productive Qualities of Soil." The question was asked, "How can we determine the productive quality of soil?" "We can plant some seeds in each kind of soil," said a child. Several volunteered to bring pots of earth.

Ready for the experiment, we proceeded to analyze the soil brought by the children as follows:

Take some of the soil in your hands, powder it as finely as possible, John, what do you find in yours? "I can feel grains of sand," said John. Do you think there is more sand or more loam? "I think there is more loam," said another child. Why do you think there is more loam? "Because, when I rub it between my fingers there seems to be more soft material than grains," came the answer. Can any one suggest a means of proving that there is some of each kind of soil in what we have here? Various sug-

gestions were made but none directly to the point. Mary, fill that glass jar three parts with water. We will now drop into the water some of this soil and mix it well. What do you think will happen when we stop stirring? "The sand will settle at the bottom of the jar," was the ready reply from a bright child. "The coarse loam will settle next," was a second answer; and again came the statement that the finest loam would remain on top. We waited a few days and were rewarded by seeing the soil in distinct layers in the jar.



THE FIRST VISIT.

Now we will try to discover which kind will produce the best plant. How shall we determine this? "Plant some seeds," was the immediate suggestion. One pot was filled with the original soil, and one each with the kinds of soil we had gotten from our experiment. A seed bean was placed in each pot, all pots subjected to same conditions and watched by anxious eyes.

"I see a bean pushing itself up," came the statement one

morning and every child wanted a peep at the tiny plant. In which soil did the plant appear? Another look was taken and answer stated that the plant came from the mixed soil. The second plant appeared from its bed of coarse loam; the one in the pot of fine loam came third, and the one in the sand struggled to a small shoot, then died of starvation.

After this, was studied the life of one plant. Thus slowly and cautiously the study of seed germination was made, getting all from



DIGGING THE DITCHES FOR DRAINING.

the child possible, and aiming to have him cull his information from the plant before his eyes.

Now that we were familiar with the facts of soil composition and seed germination we felt prepared to take up the outside work.

Between the first and fifteenth of April our first visit to the garden was made. The ground was so saturated with water that it was impossible to think of working it in that condition. After

taking a view of the surroundings this fact was discovered, that the plat was of low ground and that the water from the rising slopes back ran down and settled upon it.

The question which naturally arose was, how can this water be gotten rid of? A short talk on drainage settled the problem. The children decided that ditches, ten feet apart, should be dug crosswise in the garden. This was done, and, as the weather was favorable, in a week's time the soil was in condition to be worked.

Meanwhile, interest did not flag, though no outside work could be accomplished. Writing letters to an imaginary hardware dealer, stating what tools we needed and inquiring price, became the all absorbing topic. Next, we turned dealers ourselves and rendered itemized bills and receipts to purchasers of garden materials. In this way two forms of letter writing were taught and the children derived both pleasure and profit from the work.

Through her interest in this garden the previous year, Miss Persis Miller, who superintends the garden work in our city schools, had drawn a plan by which to landscape the plat. This suggested a talk on landscape gardening, and a lesson such as this followed. A rectangle was drawn on the board to represent the plat. Beside it was a statement of the number of beds to be laid off and the width of the paths between. In the arrangement of these beds and paths there must be artistic effect.

Each child then drew a rectangle on paper and made an original plan for landscaping. Those showing most thought were placed before the class and good points commended. The children decided that not one met every requirement. Miss Miller's plan was now shown, discussed and adopted.

The plan called for twenty rectangular beds 11 feet by 3 feet; four shorter rectangular beds with a triangular section marked off from the end of each toward the center of the garden; and a circular bed, four feet in diameter, in the middle of the plat. It also allowed for one three-foot path running through the center the entire length of the garden, and a one-foot path separating the beds. There was to be a one and a half-foot path around the middle circle. (See diagram.)

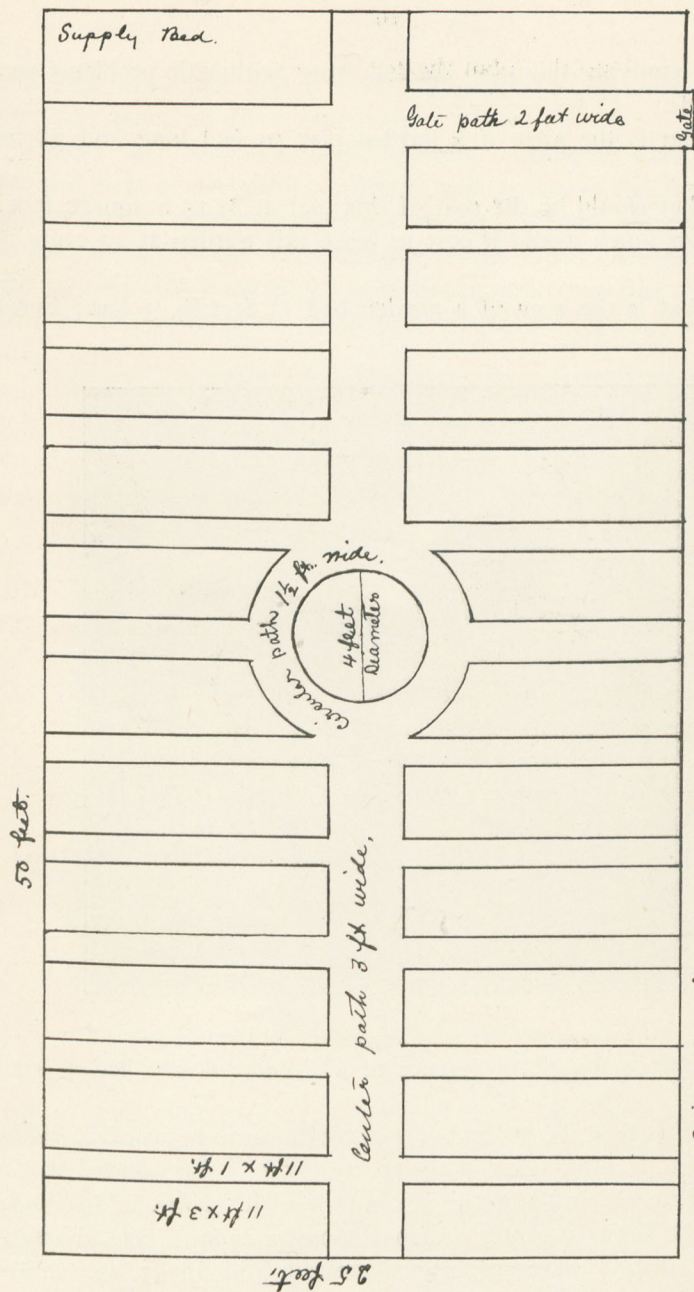


Diagram of Riverside Park School Garden, Baltimore, Md.

MISS MILLER'S PLAN.

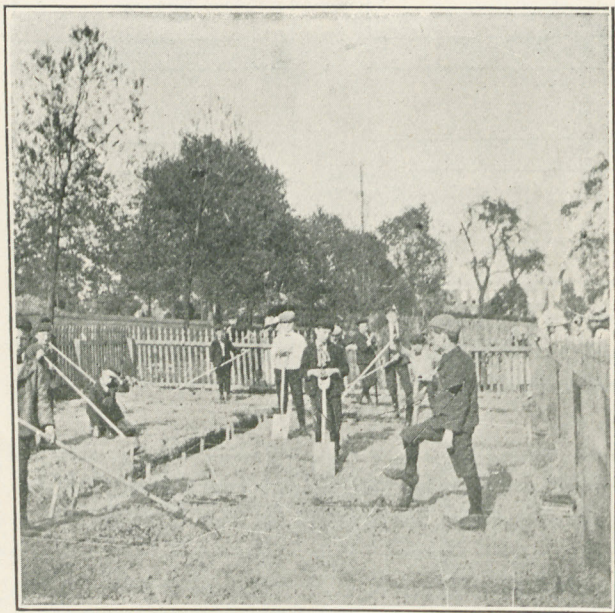
Still studying this plan the following arithmetic problems were developed:

"What is the area of a garden plat 50 feet long and 25 feet wide?"

"What would be the cost of this plat at \$1.25 a square foot?"

"How much would it cost to fence this garden at 12 cents per foot?"

"What is the area of a garden bed 11 feet by 3 feet? Perimeter?"



STAKING OFF THE BEDS AND DIGGING OUT THE PATHS.

"What is the circumference of a circular flower bed 4 feet in diameter?"

By this time the ground was in condition to be worked. Which should we do first, spade it up or lay it off? We decided that we should first dig up the entire plat and level it. Now, in spacing off should we begin at center or from opposite ends? The advantages of each method were strongly advocated, and finally, the children

themselves concluded that it would be easier to measure for the center and space off from that point.

Stakes and cord had been brought. Children stood at the sides and ends of the garden. The middle points of the sides were determined and connected with a cord, and likewise the two ends. The intersection of the cords was the center of the plat and here a stake was driven. Attaching a cord to this stake two feet along the cord was measured and a small stick tied there. Using this as a



PREPARING SOIL FOR PLANTING.

radius, a circle was made and the middle bed staked off. Next the three-foot path to opposite ends was marked off, then the center one-foot path to opposite sides. This much accomplished, spacing the rest of the plat was easy. Two small boys, with lines and stakes, marked off the remaining portion and when the ends were reached the measurements were found to be accurate. The paths between the beds were next made and the ground prepared for planting.

After spading, leveling and thoroughly pulverizing the native soil, a top layer of foreign soil was added as fertilizer. The latter came from a compost heap of street sweepings which had been standing two years and was supposed to be nutritious. As it turned out however, this soil contained little nutriment and was productive of more weeds than fine vegetables, and it required much labor to keep the weeds down.

Now came the seed planting which was intensely interesting to the children. Rows, twelve inches apart, were marked off across the beds and the seeds planted according to the relative height of the plants which they would produce, placing the tallest next to the fence, graduating to the center. (See diagram.)

FENCE.

Corn.
Pole Beans.
Peas.
String Beans.
Lettuce.
Radishes.
Lettuce.
Parsley.
Flowers.

First came corn, three grains to a hill, the hills twelve inches apart. Then pole beans, three beans to a hill and these hills separated twelve inches. Next we planted two peas in a hill and made the hills six inches apart. The string beans were planted just as the peas. Then came a row of lettuce, next radishes, a second row of lettuce and last parsley, leaving the end of the bed for flowers.

On Arbor Day, in the class-room, we had sown tomato and lettuce seeds in boxes that we might have the plants ready for transplanting when our outside soil was in condition. The lettuce plants turned out satisfactorily, but, for some unaccountable reason, the tomatoes were a failure. To replace the latter, we took a corner bed in the garden, divided it into three sections and planted tomato, onion and cabbage seeds. In five weeks the tomato and cabbage plants were large enough to transplant and, as the radishes and lettuce matured and were used, tomato and cabbage plants were put in the vacant spaces.

Why had we planted onion seeds? One of the boys had brought an onion and asked if he might plant it in his bed, and if it would produce other onions. I explained to him and then allowed him to sow the seeds in the supply bed at the same time that



WEEDING THE BEDS.



GATHERING THE VEGETABLES.

he planted the onion in his own bed. The onion planted produced seed, while the seeds sown yielded the small sets for the next year's planting. Thus by the act of one child, was clearly demonstrated to the class, the fact that fruit produces seed and seed produces fruit.

Miss Miller had given us a wren-box, made by a child in a more advanced class as manual work. The children were delighted with the gift; they built a framework around a stout pole in the center bed and set the wren-box on the top of the pole. They then suggested that a vine should cover this framework. Consequently Japanese morning glories were chosen as the vine and the remain-



LAST DAY OF SCHOOL.

ing space in the bed was filled with marigolds, nasturtiums and coleus.

Having planted the seeds, the work in the garden was at a standstill until the plants appeared, then systematic visits commenced. The class was divided into three groups and two children were assigned to a plat. We worked in the garden Mondays, Wednesdays, and Fridays, half an hour each day. Thus each group had its day once a week regularly. Finding that it was impossible to direct satisfactorily more than twelve children at a time, I devised the above plan which worked admirably. To go to and come from the garden took half an hour, and with half an hour's work there,

the child was from the class-room one hour a week. This allowed ample time to keep the beds in order, as by apportioning two children to a bed, and these two going on separate days, each plat was worked twice a week.

The seeds were planted April thirtieth and when school closed, June twenty-second, there had been gathered two crops each of lettuce and radishes, one crop of peas and one of beans. Green tomatoes were on the vines, the corn was in tassel, the flowers were blooming and we felt repaid for our labor.

The children took care of the garden during vacation, gathered the vegetables as they ripened and with pardonable pride carried



GIRL INTEREST.

them home to their parents. The parents in turn were gratified and as much interested as the child. In several instances the boys had individual appliances made by the father for use in the garden. Often on Monday mornings would come the account of the Sunday walk with mother and father, the visit to the garden and how much the parents admired it.

One incident occurred which proved the value of this garden work and showed how devoid many city children are of a knowledge of vegetable growth. I noticed a boy digging around the root of his tomato vine as if he were searching for something. I asked what he was doing. "I want to see if there are any small tomatoes

there," he replied. As the fruit of the radish had come from under the ground he expected to find the tomato there too.

The value of educating the child through his self-activity was proven in several instances, one of which I will mention. A large boy of the fourth grade, though a poor student, was placed on the list of garden children and proved to be the most industrious and active child of the group. Why? His father was a baker; the boy worked in the bakery until eleven every night; slept until four, then arose, delivered goods until eight and was in the class-room at nine. Is there any wonder that this child lacked energy as a student? Consequently, when removed from the confinement of the class-room, the pure outside air acted as a tonic, the boy's interest was



WHAT ARE YOU DOING?

awakened and his work well done. This same child, whenever relieved of home duties out of school hours, spent the time at the garden instead of devoting it to play. He hauled a quantity of shells with which to pave the paths, and brought all the sod we needed to form a firm edge around the center bed. Can there be any doubt that this boy was benefited?

There is a social side to this industrial outside work which is superior to that of the class-room.

First—The teacher, at one time, has but a small number of children under her care, consequently she is enabled to learn more of each individual nature.

Second—The child is under no apparent restraint, so, expresses himself freely and shows his natural self.

Third—The boys and girls mingle with each other with the same freedom that they have on their own playground.

In the two months spent in the garden not a single child took undue advantage of the privileges allowed and the opportunity afforded the teacher for the study of child nature was of great value.

Some one might ask, "While doing garden work, does not that of the class-room suffer?" It does not. When classes are taught in sections, this outside work can be fitted in as a sectional part and the regular routine kept in tact.



MAY I COME IN ?

In summarizing, the lessons developed from garden work were: science (soil physics and seed germination), geography, arithmetic, spelling, English and drawing. The greatest benefit to the teacher was the chance to study the child under natural conditions. The greatest benefit to the child was his awakening to a knowledge of things by personal contact. I sincerely believe that the after life of each one of these children will be the richer for having had the experience of this outdoor study.

In some of the school yards, the pavement near the fence has been removed and the space divided into small beds for gardening. Many of these gardens make a fine showing and you will find here

three pictures of such a yard, illustrating what may be done within the limits of the playground of a city school. When you consider, that between three and four hundred children have to play in this yard at the same recess time every day, you can appreciate what it means to yield a portion of the limited space to vegetables and flowers, and since these plants are never molested, how much the children are pleased to have their playground so decorated.

If a city teacher with such limited opportunities and numberless disadvantages can accomplish even a little in this line for the children in her charge, how much more should the teacher of the



MY BED LOOKS THE BEST

rural school accomplish when she has space at her command, children reared in the environment of country life and seemingly all things that tend to work together to produce good results. So much interest is shown in this phase of industrial work all over the country, that I doubt if there is anywhere a teacher who does not wish to add this study to the curriculum, unless she is already working along these lines. Feeling sure of the sympathy aroused in every teacher's heart who may read this article, I give as the last three illustrations scenes from rural school life.

"A Flower from the Country" pictures the little child just entered kindergarten, but she has soon tired of its attractions and has

slipped away to enjoy the more enticing pleasures which "Mother Nature" has provided for her.

"Studying Nature" reveals the "duet" of some school experience, who, perhaps, have gone out in search of a flower for teacher, or with the hope of seeing a beautiful bird or hearing its sweet song. As they sit together, they seem much absorbed in discussing the object of their errand.



A GARDEN IN THE YARD OF A CITY SCHOOL. BEDS 3 FEET BY 3 FEET.

"A Suggestion for Recess Hour" gives us a picture of the same three "tots" joined by their class-mates and teacher, and the latter, apparently, is giving them a most attractive talk about some flower which one of them has found.

To me these pictures appeal so strongly in behalf of the deepest love of nature in even the youngest child, that they point to the

possibilities of what might be, when this love is fed and made to grow with the physical nature of the child.

VIRGINIA MCGAW,

School 33, Baltimore, Md.

The school yard referred to is No. 84, Group C.

The privilege of using the first eight of the accompanying illustrations was granted by Mr. Van Sickel, Superintendent of our



THIS IS A SPACIOUS YARD FOR A CITY SCHOOL AND GARDEN BEDS EXTEND AROUND THREE SIDES OF THE PLAY-GROUND.

city schools, and Miss Persis Miller of the Teachers' Training School, who has charge of the "Nature Work Department." We tender them a vote of thanks.

If there is any teacher who is interested in school gardening, and is not already in touch with it, a most helpful pamphlet can be had by applying to the U. S. Department of Agriculture and asking for Farmers' Bulletin, No. 218, "The School Garden." No charge.



ANOTHER SECTION OF SAME GARDEN.



A FLOWER FROM THE COUNTRY.



STUDYING NATURE.



A SUGGESTION FOR RECESS HOUR.

